

WHAT IS CLAIMED IS:

1. A system comprising:

server communicatively coupled to a communication network;

aggregate context information specifying operational parameters available via said communication network, wherein said aggregate context information is communicatively accessible by said server; and

5 at least one device communicatively coupled to said communication network, wherein said at least one device includes operational specification information specifying individual operational parameters of said at least one device stored locally to said at least one device, and wherein said at least one device further includes relational context information stored locally thereto specifying the relation of said individual operational parameters of said at least one device to said aggregate of operational parameters available via said communication network.

10 2. The system of claim 1 wherein said communication network is a network selected from the group consisting of: general purpose processor-based information network, PSTN, wireless network, LAN, WAN, modem to modem connection, the Internet, an Intranet, an Extranet, and any combination thereof.

3. The system of claim 1 wherein said aggregate context information includes information specifying an aggregate of operational parameters available via a totality of devices communicatively coupled to said communication network.

4. The system of claim 1 wherein said aggregate context information includes information specifying an aggregate of operational parameters available via a totality of devices of a particular type communicatively coupled to said communication network.

5. The system of claim 1 wherein said aggregate context information includes information specifying one or more ranges of operational parameters available via devices coupled to said communication network.

6. The system of claim 1 wherein said at least one device is selected from the group consisting of: printers, processor-based devices, data storage devices, fax machines, optical scanners, PDAs, digital cameras, and any peripheral device capable of being communicatively coupled, either directly or indirectly, to said communication network.

7. The system of claim 1 wherein said relational context information includes information comparing one or more of said individual operational parameters of said at least one device to like operational parameters of other devices coupled to said communication network.

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8. The system of claim 1 wherein said at least one device includes a software application executable thereon to receive at least a portion of said aggregate context information and map one or more of said individual operational parameters of said at least one device onto the received aggregate context information to generate said relational context information.

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9. The system of claim 1 wherein said server includes a software application executable thereon to map said aggregate context information into relational categories.

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10. The system of claim 9 wherein said relational categories includes different categories for different values of an operational parameter.

11. The system of claim 1 wherein said at least one device includes a software application executable thereon to map one or more of said individual operational parameters of said at least one device onto proper relational categories of said aggregate context information.

12. The system of claim 11 wherein said software application is executable to respond to a received query as to whether one or more of said operational parameters of said at least one device are within a particular relational category of said aggregate context information.

13. The system of claim 1 wherein said at least one device includes a software application executable thereon to communicate said operational specification information to said server, and wherein said server includes a software application executable thereon to receive said operational specification information and update said aggregate context
5 information to reflect said operational specification information.

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14. A device communicatively connectable to a communication network, said device comprising:

operational specification information stored locally thereto, wherein said operational specification information includes information specifying individual operational parameters
5 of said device;

means for receiving aggregate context information specifying an aggregate of operational parameters available via said communication network; and

means for mapping at least a portion of said operational specification information onto the received aggregate context information to generate relational context information specifying the relation of said individual operational parameters of said device to said aggregate of operational parameters available via said communication network.

15. The device of claim 14 wherein said means for receiving and said means for mapping comprise a software application executable on said device.

16. The device of claim 14 wherein said relational context information is stored locally to said device.

17. The device of claim 14 wherein said aggregate context information includes information specifying an aggregate of operational parameters available via a totality of devices of at least one type communicatively coupled to said communication network.

18. The device of claim 14 wherein said aggregate context information includes information specifying one or more ranges of operational parameters available via devices coupled to said communication network.

19. The device of claim 14 wherein said relational context information includes information comparing one or more of said individual operational parameters to like operational parameters of other devices coupled to said communication network.

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20. A method for providing relational context intelligence to a network device, said method comprising the steps of:

communicatively coupling a server to a communication network;

communicatively coupling a first network device to said communication network;

5 receiving at said server from said first network device operational specification information specifying individual operational parameters of said first network device;

updating aggregate context information at said server to reflect the received operational specification information, wherein said aggregate context information specifies an aggregate of operational parameters available via said communication network;

10 communicating at least a portion of said aggregate context information to said first network device;

said first network device generating relational context information specifying a relation of said first network device's operational parameters to operational parameters of other network devices communicatively coupled to said communication network; and

15 storing said relational context local to said first network device.

21. The method of claim 20 wherein said generating relational context information further comprises:

5 said first network device mapping at least a portion of operational parameters available from said operational specification information of said first network device onto the received aggregate context information to generate said relational context information.

22. The method of claim 20 wherein said aggregate context information includes information specifying an aggregate of operational parameters available via a totality of devices communicatively coupled to said communication network.

23. The method of claim 20 wherein said aggregate context information includes information specifying an aggregate of operational parameters available via a totality of devices of a particular type communicatively coupled to said communication network.

24. The method of claim 20 wherein said relational context information includes information comparing one or more of said individual operational parameters of said first network device to like operational parameters of other devices coupled to said communication network.

25. The method of claim 20 further comprising:
said server mapping said aggregate context information into relational categories.

26. The method of claim 25 further comprising:
said first network device mapping one or more of said individual operational parameters of said first network device onto proper relational categories of said aggregate context information.

27. The method of claim 26 further comprising:
said first network device responding to a received query as to whether one or more of said operational parameters of said first network device are within a particular relational category.

28. The method of claim 20 further comprising the steps of:

communicatively coupling a second network device to said communication network;

receiving at said server from said second network device operational specification information specifying individual operational parameters of said second network device;

5 updating said aggregate context information at said server to reflect the received operational specification information received from said second network device;

communicating at least a portion of the updated aggregate context information to said second network device;

10 said second network device generating relational context information specifying a relation of said second network device's operational parameters to operational parameters of other network devices communicatively coupled to said communication network; and

storing said relational context local to said second network device.

29. The method of claim 28 further comprising the steps of:

said server communicating the updated aggregate context information to said first network device; and

5 said first network device re-generating relational context information specifying a relation of said first network device's operational parameters to operational parameters of other network devices communicatively coupled to said communication network.

30. The method of claim 29 wherein said re-generating relational context information further comprises:

5 said first network device mapping at least a portion of operational parameters available from said operational specification information of said first network device onto the received updated aggregate context information to generate said relational context information.

31. A device communicatively connectable to a communication network, said device comprising:

operational specification information stored locally thereto, wherein said operational specification information includes information specifying individual operational parameters of said device;

wherein said device is configured to receive aggregate context information specifying an aggregate of operational parameters available via said communication network; and

wherein said device is configured to map at least a portion of said operational specification information onto the received aggregate context information to generate relational context information specifying the relation of said individual operational parameters of said device to said aggregate of operational parameters available via said communication network.

32. The device of claim 31 further comprising:

software stored locally to said device that is executable by said device to receive said aggregate context information and to map said at least a portion of said operational specification information onto the received aggregate context information to generate said relational context information.

33. The device of claim 31 wherein said relational context information is stored locally to said device.

34. The device of claim 31 wherein said aggregate context information includes information specifying an aggregate of operational parameters available via a totality of devices of at least one type communicatively coupled to said communication network.

35. The device of claim 31 wherein said aggregate context information includes information specifying one or more ranges of operational parameters available via devices coupled to said communication network.

36. The device of claim 31 wherein said relational context information includes information comparing one or more of said individual operational parameters to like operational parameters of other devices coupled to said communication network.

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37. A computer program product for providing relational context intelligence to a device communicatively connectable to a communication network, said computer program product comprising a computer-readable storage medium having computer-readable program code embodied in said medium, said computer readable program code comprising:

5 code executable to receive aggregate context information specifying an aggregate of operational parameters available via said communication network; and

code executable to map at least a portion of operational specification information for said device onto the received aggregate context information to generate relational context information, wherein said operational specification information includes information specifying individual operational parameters of said device and wherein said relational context information includes information specifying the relation of said individual operational parameters of said device to said aggregate of operational parameters available via said communication network.

10 38. The computer program product of claim 37 wherein said device comprises said computer-readable storage medium local thereto, and wherein said device includes a processor for executing said computer readable program code.

39. The computer program product of claim 37 wherein said computer readable program code further comprises:

code executable to store said relational context information locally to said device.

40. The computer program product of claim 37 wherein said aggregate context information includes information specifying an aggregate of operational parameters available via a totality of devices of at least one type communicatively coupled to said communication network.

41. The computer program product of claim 37 wherein said aggregate context information includes information specifying one or more ranges of operational parameters available via devices coupled to said communication network.

42. The computer program product of claim 37 wherein said relational context information includes information comparing one or more of said individual operational parameters to like operational parameters of other devices coupled to said communication network.

43. The computer program product of claim 37 wherein said device is selected from the group consisting of: printers, processor-based devices, data storage devices, fax machines, optical scanners, PDAs, digital cameras, and any peripheral device capable of being communicatively coupled, either directly or indirectly, to said communication network.

44. The computer program product of claim 37 wherein said aggregate context information is arranged into relational categories, and wherein said computer readable program code further comprises:

code executable to map one or more of said individual operational parameters of said device onto proper relational categories of said aggregate context information.

43. The computer program product of claim 44 wherein said computer readable program code further comprises:

code executable to respond to a received query as to whether one or more of said operational parameters of said device are within a particular relational category of said aggregate context information.

44. The computer program product of claim 37 wherein said computer readable program code further comprises:

code executable to communicate said operational specification information to a server via said communication network.

45. The computer program product of claim 44 wherein said code executable to receive said aggregate context information is executable to receive said aggregate context information from said server via said communication network

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